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THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY, DIVISION OF MYCOLOGY AND DISEASE SURVEY
BUREAU OF PLANT INDUSTRY, AGRICULTURAL RESEARCH ADMINISTRATION
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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

IN THIS ISSUE

Check list revision, by Freeman Weiss, page 422.

Downy mildew appeared on soybeans in Iowa for the first time this year, according to I. E. Melhus reporting some unusual occurrences of diseases on this crop, page 431.

S. B. Fenne reports on the incidence of tobacco diseases in Virginia in 1942, page 432, and Wilbert A. Jenkins gives details for bright tobacco in Pittsylvania County, page 434.

Potato late blight was severe in the Upper Mississippi Valley according to I. E. Melhus, page 437. In other brief notes: Otto A. Reinking reports resistance of a beet strain to scab; P. A. Young has observed a canker on Crotalaria in Texas; M. T. Hilborn reports the first observation of bitter pit on McIntosh apples in Maine; and a correction.

Request for information, page 439.

CHECK LIST REVISION

Freeman Weiss

THUJA (PINACEAE -- CUPRESSINEAE)

THUJA OCCIDENTALIS L., AMERICAN (Eastern) ARBORVITAE (Northern white-cedar). Evergreen tree of Growth Regions 22, 23, 24, 26, 27; cult. for ornament in numerous (mostly dwarf) horticultural forms, Zone II.

Armillaria mellea Vahl ex Fr., root rot. Mich., N. Y., Texas.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Didymascella thujina (Durand) Maire (Keithia thujina Durand), leaf blight, seedling blight. Vt. to Va. & Wis.
Fomes annosus (Fr.) Cke., brown butt rot. Mich.
F. roseus (Alb. & Schw. ex Fr.) Cke., brown trunk rot. Me.
Fusarium solani (Mart.) App. & Wr., seedling root rot. Texas.
Lenzites saepiaria Wulf. ex Fr., wood rot. Minn.
Lophodermium thuyae Davis, needle spot. Me., N. H., N. Y., Wis.
Micropera tenella Sacc. & Ell., on branches. N. J.
Mycosphaerella sp., ? twig blight. Ala., Pa.
M. conigena (Pk.) House, on twigs & cones. N. Y.
M. pinsapo (Thüm.) House, on twigs. N. Y.
Pestalotia funerea Desm., twig blight. Widespread.
Phacidium infestans Karst., snow blight. N.E. States.
Phomopsis juniperovora Hahn, nursery blight. Ind., Ky., Ohio, Pa., Va.
P. occulta Trav., on injured twigs. N. Y.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on dead branches. Ga., Pa.
Phytophthora sp., twig blight. N. J.
Polyporus spp., wood rot. Spp. reported include P. adustus Willd. ex Fr., Minn., Pa.; P. balsameus Pk., brown butt rot, Great Lakes States; P. hirsutus Wulf. ex Fr., Me.; P. schweinitzii Fr., brown root & butt rot, N.E. States; P. versicolor L. ex Fr., Me.
Poria vaporaria Fr., brown cubical rot. Great Lakes States.
P. weirii Murr., yellow ring rot. Great Lakes States.
Rhizoctonia solani Kühn, damping off. Conn.
Schizophyllum commune Fr., wood rot. Me.
Trametes isabellina Fr., wood rot. Mich.
Valsa thujae Pk., on dead branches. N. Y.

THUJA ORIENTALIS L., ORIENTAL ARBORVITAE. Evergreen tree of E. Asia, cult. in numerous horticultural forms, Zone V-VI.

Alternaria sp., dieback (probably secondary). Texas. Arborvitae grown in nursery and ornamental plantings is subject to physiological dieback resulting chiefly from drought; various secondary

THUJA ORIENTALIS cont.

fungi are associated but have not been shown to be parasitic.

Armillaria mellea Vahl ex Fr., root rot. Miss., Texas.
Beltrania rhombica Penz., dieback. Fla. See note under Alternaria.
Botrytis cinerea Pers., gray mold twig blight. N. J.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Coryneum berckmanii Milbrath, twig blight. Oregon, Wash. Chiefly on the yellow var. Berckmann.
C. cardinale Wagener, twig canker. Calif.
Didymascella thujina (Durand) Maire, leaf blight. Texas.
Diplodia sp., dieback. Ala., Fla. See note under Alternaria.
Pestalotia funerea Desm., dieback. Widespread.
Phomopsis juniperovora Hahn, nursery blight. Pa.
P. occulta Trav., dieback. Miss., N. J., S. Car., Texas. See note under Alternaria.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Rhizoctonia solani Kühn, damping off. N. H., N. Y., Texas, Va.
Valsa abietis Fr., on twigs. Pa.

THUJA PLICATA D. Don, GIANT ARBORVITAE (Western red-cedar). Evergreen tree of Growth Regions 1, 2, 4, 6, 7, 12; important source of lumber.

Aleurodiscus amorphus (Pers. ex Fr.) Rabh., on bark of suppressed or injured trees. Oregon.
Armillaria mellea Vahl ex Fr., root rot, butt rot. Widespread.
Coryneum spp., twig blight. Idaho, Oregon, Wash. Spp. reported include C. juniperinum Ell. and C. thujinum Dearn.
Cucurbidothis conjuncta Petr., on branches. Idaho.
Didymascella thujina (Durand) Maire (Keithia thujina Durand), leaf blight. Mont. to Wash. & Calif.
Echinodontium tinctorium (Ell.) Ell. & Ev., brown stringy rot. Idaho.
Fomes annosus (Fr.) Cke., brown butt rot. Idaho.
F. applanatus (Pers. ex Fr.) Gill., white mottled butt rot. Wash.
F. nigrolimitatus (Romell) Egel., white pocket rot chiefly of slash. Idaho.
F. pini (Brot. ex Fr.) Karst., red ring rot. N.W. States.
F. pinicola (Sw. ex Fr.) Cke., brown trunk rot. Wash.
F. subroseus (Weir) Overh., brown cubical rot. N.W. States.
Hendersonia thyoides Cke. & Ell., twig blight. Oregon.
Herpotrichia nigra Hartig, snow blight. Idaho.
Lenzites saepiaria Wulf. ex Fr. and L. trabea Pers. ex Fr., wood rot. Cosmopolitan.
Microthyrium thujae Dearn., on leaves. Oregon.
Mycosphaerella thujae Petr., on leaves. Idaho.
Pestalotia funerea Desm., dieback. Wash.
Polyporus spp., wood rot. Spp. reported include P. abietinus Dicks. ex Fr., sapwood rot, Idaho, Wash.; P. adustus Willd. ex Fr., Idaho; P. anceps Pk., red ray rot, Idaho; P. cuneatus (Murr.)

THUJA PLICATA cont.
Buchanan, sapwood rot, N.W. States; P. dichrous Fr., Idaho, Mont., Wash.; P. elegans Bull. ex Fr., Idaho; P. guttulatus Pk., Idaho; P. hirsutus Wulf. ex Fr., Idaho; P. schweinitzii Fr., brown root and butt rot, Idaho, Wash.; P. versicolor L. ex Fr., sapwood rot, Idaho, Wash.
Poria weirii Murr., yellow ring rot. General.
Stereum spp., wood rot.
S. chailletii Pers. ex Fr., Idaho.
S. sanguinolentum Alb. & Schw. ex Fr., Mont.
S. sulcatum Burt, Alaska.
Thelephora terrestris Ehr. ex Fr., seedling stem girdle. Wash.
Trametes isabellina Fr., wood rot. Calif., Idaho.
Valsa abietis Fr., and V. weirii Petr., on dead branches. Idaho, Wash.

THUJOPSIS (PINACEAE -- CUPRESSINEAE)

THUJOPSIS DOLABRATA (L. f.) Sieb. & Zucc., HIBA ARBORVITAE. Evergreen tree of Japan, cult. for ornament, Zone VI.

Phomopsis occulta Trav., dieback. Calif.

THURBERIA (MALVACEAE)

THURBERIA THILOBA (DC.) Tidest., ARIZONA WILD COTTON. Shrub of Growth Regions 10, 11, 14, sometimes grown for ornament in the Southwest.

Diplodia theobromae (Pat.) Nowell (D. natalensis Pole-Evans), dieback. Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Phytomonas malvacearum (EFS.) Bergey et al., angular leaf spot. Ariz.

TIBOUCHINA (MELASTOMACEAE)

TIBOUCHINA spp., GLORYBUSH. Shrubs of S. America, grown for ornament in the far South.

Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.

TILIA (TILIACEAE)

TILIA AMERICANA L., AMERICAN LINDEN, (BASSWOOD). Forest tree of Growth Regions 20, 21, 22, 23, 24, 25, 26, 27; grown for shade and ornament, Zone II; valuable honey plant. A few records on closely related host spp. occurring mostly in the South and often not specifically distinguished are included

TILIA AMERICANA cont.

Aleurodiscus acerinus (Pers. ex Fr.) Höhn. & Litsch., and
A. griseo-canus (Bres.) Höhn. & Litsch., on bark, ? canker.
Pa., Iowa, Mo.

Asteroma tiliae Rud., on leaves. Ind., Wis.

Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug., on branches.
Md., N. J., N. Y.

Cercospora microsora Sacc., leaf blight. General. (? Conidial
stage of Mycosphaerella microsora Syd.)

Collybia velutipes Fr., sapwood rot, wound rot. Occasional.

Daedalea confragosa Bolt. ex Fr., white spongy rot, wound rot. Vt.
D. unicolor Bull. ex Fr., Iowa, N. Dak.

Daldinia concentrica (Bolt.) Ces. & DeNot., wood rot. Minn., N. Y.
D. grande Child and D. occidentale Child. Minn.

Dendrophoma tiliae Pk., on branches. N. Y.

Diaporthe eres Nits. (D. velata Pers. ex Nits.), on branches. Mich.
D. tiliacea (Ell.) Höhn., on branches. Iowa, Me., Mich., N. Y., Pa.

Exosporium tiliae Lk. ex Fr., on branches. N. Y. to Va. and Mich.

Fomes applanatus (Pers. ex Fr.) Gill., white butt and heart rot. Vt.
F. connatus (Weinm. ex Fr.) Gill., white spongy rot. N.E. States.
F. pinicola (Sw. ex Fr.) Cke., brown cubical rot. N. Y.

Gnomonia tiliae Kleb. (Gloeosporium tiliae Oud.), leaf spot.
Conn. to Va., Iowa & Minn.

Hydnum septentrionale Fr., white spongy rot. Ala., Mich.

Lenzites betulina L. ex Fr., wood rot. N. Y., Vt.

Macrophoma tiliacea Pk., on branches. Ohio.

Melanconis juglandis (Ell. & Ev.) Graves var. tiliae Wehmeyer,
on branches. Mich.
M. tiliacea (Ell.) Ell. & Ev. = Diaporthe tiliacea.

Microsphaera alni DC. ex Wint.; powdery mildew. Minn.

Myxosporium fumosum Ell. & Ev., on dead twigs. Ill.
M. tiliae Dearn. N. Y. (Possibly identical with Myxofusicoccum
tiliae Died., and related to Diaporthe tiliacea.)

Nectria spp. (N. coccinea Pers. ex Fr., N. galligena Bres.), trunk
and branch canker. N. Y., Pa., Va.
N. cinnabarina Tode ex Fr., on branches, dieback. Widespread.

Phlyctaena tiliae Dearn., leaf spot. Tenn.

Pholiota adiposa Fr., brown mottled heart rot. Mass., Pa. to Tenn.

Phoradendron flavescens (Pursh) Nutt., mistletoe. Southern States.

Phyllactinia corylea DC. ex Karst., powdery mildew. Minn.

Phyllosticta praetervisa Bubak, leaf spot. Wis.
P. tiliae Sacc. & Speg., N. Y. to W. Va.

Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.

Physalospora obtusa (Schw.) Cke., on branches. N. Y., Va.

Pleurotus ostreatus Fr. and P. sapidus Kalch., sapwood rot, sometimes
on living trees. Cosmopolitan.

Polyporus spp., wood rot chiefly of dead trunks, sometimes heart
rot of living trees. Spp. reported include P. adustus Willd.
ex Fr., Minn., Mo., N. Y., Vt., Wis.; P. biformis Klotzsch,
N. Y.; P. elegans Bull. ex Fr., Mo., Ohio, N. Y.; P. fumosus
Pers. ex Fr., N. Y.; P. galactinus Berk., Minn.; P. gilvus Schw.

TILIA AMERICANA cont.
ex Fr.; P. hirsutus Wulf. ex Fr., Mass., N. Y., Vt.; P. pargamenus Fr., N. Y., Vt.; P. resinosus Schrad. ex Fr., Minn., N. Y., Vt.; P. spumeus Sow. ex Fr., N. Y.; P. squamosus Huds. ex Fr.; P. unitus Pers., Mich.; P. versicolor L. ex Fr., Ind., Vt.
Rabenhorstia tiliae Fr., on branches. Iowa, Me., N. Car. Conidial stage of Hercospora tiliae.
Russula sp., parasitic mycorrhiza. Mich.
Schizophyllum commune Fr., wood rot. Minn.
Sclerotinia tiliae Reade, on fallen fruits. Iowa.
Septobasidium fumigatum Burt, felt. Fla.
Stereum spp., wood rot chiefly logs and slash, including S. cinerascens (Schw.) Massee, Iowa, Minn.; S. fasciatum Schw. ex Fr., Vt.; S. murrayi (Berk. & Curt.) Burt, Pa.
Strumella sp. (S. coryneoidea Sacc. & Wint.?), trunk canker. N. J.
Torula ligniperda (Willk.) Sacc., gray sapwood stain.
Trametes mollis Sommerf. ex Fr., wood rot. Vt.
Uncinula clintonii Pk., powdery mildew. General.
Ustulina vulgaris Tul., root rot. N. Y.
Verticillium albo-atrum Reinke & Berth., wilt. Ill.

TILIA CORDATA Mill. (also in part T. EUROPEA L. = T. CORDATA x T. PLATYPHYLLOS Scop.), EUROPEAN LINDEN. Large tree of Europe, extensively planted for shade, Zone III.

Cercospora microsora Sacc., leaf spot. N. J.
Gloeosporium tiliae Cud., leaf spot. N. Y. Conidial stage of Gnomonia tiliae.

TRACHELOSPERMUM (APOCYNACEAE)

TRACHELOSPERMUM JASMINOIDES Lem., CONFEDERATE-JASMINE. Evergreen vine of China cult. for ornament in the far South.

Cercospora repens Ell. & Ev., leaf spot. La.

TRICHILIA (MELIACEAE)

TRICHILIA spp. Small trees of tropical America, sometimes planted for ornament.

Uredo trichiliae Arth., rust II. P. R.

TSUGA (PINACEAE)

TSUGA CANADENSIS (L.) Carr., CANADA or EASTERN HEMLOCK. Evergreen forest tree of Growth Regions 22, 23, 24, 25, 27, 28; source of lumber and tan bark, and grown for ornament in numerous hort. forms, Zone IV.

TSUGA CANADENSIS cont.

Aleurodiscus amorphus (Pers. ex Fr.) Rabh. and A. farlowii Burt, on branches & trunks of suppressed trees. N.E. States.
Armillaria mellea Vahl ex Fr., root & butt rot. Mass. to Pa. & Mich.
Ascochyta conicola Dearn. & House, on cone scales. N. Y.
(Asterina nuda Pk.): Phaeocryptopus nudus (Pk.) Petr. N. Y.
Botrytis sp., twig blight. N. J.
Caliciopsis pinea Pk., on dead bark of sapling, ? bark canker. Pa.
(Cenangium balsameum Pk., and var. abietinum Pk.): Dermatea balsamea (Pk.) Seaver.
Coniophora puteana (Schum. ex Fr.) Karst., sapwood rot chiefly of slash. Widespread.
Cylindrocladium scoparium Morgan, seedling root rot. N. J.
Cytospora sp. (? C. curreyi Sacc.), twig canker. Md., Va.
Dasyscypha agassizii (Berk. & Curt.) Sacc., on branches. N. Y.
Dermatea balsamea (Pk.) Seaver, canker, twig blight. Ga., N. Y., Tenn., Va.
Didymascella tsugae (Farl.) Maire (Keithia t. Farl.), needle blight. Mass., N. H., Wis.
Dimerosporium tsugae Dearn., on needles. Ga., N. Car., Tenn., Va.
Fomes spp., wood rot of living or dead trees and logs, especially:
F. annosus (Fr.) Cke., white spongy sapwood rot. Conn.
F. applanatus (Pers. ex Fr.) Gill., white mottled root & butt rot. Occasional.
F. pini (Brot. ex Fr.) Karst. including var. abietis Karst., red ring rot, white pocket heart rot. N.E. States to Tenn.
F. pinicola (Sw. ex Fr.) Cke., brown cubical rot of trunks & logs. Widespread.
F. roseus (Alb. & Schw. ex Fr.) Cke., brown cubical trunk rot. Me. to W. Va.
F. subroseus (Weir) Overh., brown cubical rot of logs & timber. N. Y., Pa., Va.
Ganoderma lucidum (Leyss. ex Fr.) Karst. (G. tsugae Murr.), white spongy sapwood & heart rot. N.E. States to Ind. & Wis.
Gelatinosporium abietinum Pk. Conidial stage of Dermatea balsamea.
Hymenochaete agglutinans Ell., stem girdle of saplings. Pa.
Lenzites betulina L. ex Fr., white sapwood rot. N. Y.
L. saepiaria Wulf. ex Fr., and L. trabea Pers. ex Fr., brown cubical rot of logs & timber. Widespread.
Melampsora abietis-canadensis Ludwig, needle & cone rust (C, I). New England to Pa. & Wis. II and III on Populus spp.
M. farlowii (Arth.) Davis, needle & cone rust (III). New England to N. Car. & Wis.
Micropera abietina (Pk.) Höhn. Conidial stage of Dermatea balsamea.
Mycosphaerella tsugae (Pk.) House, on cone scales. N. Y.
Phacidium tsugae Cash & Davidson, on discolored needles. N. Car.
Phomopsis occulta Trav., on blighted twigs. Mass., N. J., N. Y.
Polyporus spp., sapwood rot of standing or fallen trees, sometimes heart rot of living trees, especially:
P. abietinus Dicks. ex Fr., white sapwood rot. General.

TSUGA CANADENSIS cont.

Polyporus albidus Pk., N. Y.
P. amorphus Fr., brown stringy rot, Pa.
P. anceps Pk., red ray rot, Mass.
P. borealis Fr., brown cubical rot, Mass., N. Y., Tenn., Va.
P. caesius Schrad. ex Fr., Me.
P. cinnabarinus Jacq. ex Fr., Pa., Vt.
P. circinatus Fr., white root & butt rot, N. Y., Wis.
P. dichrous Fr., N. Y.
P. dualis Pk., N. Y.
P. fibrillosus Karst., N. Y., Tenn.
P. fissus Berk., Mich.
P. fragilis Fr., N. Y.
P. gilvus (Schw.) Fr., Pa.
P. guttulatus Pk., N. Y.
P. hirsutus Wulf. ex Fr., N. Y.
P. prolificans Fr., N. Y., Pa.
P. resinosus Schrad. ex Fr., Me., Tenn., Vt.
P. spraguei Berk. & Curt., N. Y.
P. spumeus Sow. ex Fr., Me.
P. subpendulus (Atk.) Sacc. & Trott., N. Y.
P. sulphureus Bull. ex Fr.
P. tulipiferus (Schw.) Overh., Vt.
P. undosus Pk., N. Y.
P. versicolor L. ex Fr., Widespread.

Poria spp., wood rot usually of dead trunks, logs or timber, especially P. ferruginosa Schrad. ex Fr., white spongy rot; P. incrassata (Berk. & Curt.) Burt, dry rot of timber, widespread; P. isabellina (Fr.) Overh., white pocket rot, N. Y.; P. subacida (Pk.) Sacc., white spongy rot, N.E. States; P. tsugina (Murr.) Sacc. & Trott., white spongy rot, N.E. States to Tenn.; P. vaillantii (Fr.) Cke., dry rot of timber, widespread.

Pucciniastrum hydrangeae (Berk. & Curt.) Arth., needle rust (O, I). Ind., Md., Pa., Tenn., Va. II & III on Hydrangea arborescens.

P. myrtilli (Schum.) Arth., needle rust (O, I). Me. to Ala., Ind. & Wis. II & III on Ericaceae.

Rhizina undulata Fr., seedling root rot. N. Y.

Rhizoctonia solani Kühn, damping off. Cosmopolitan.

Rosellinia herpotrichioides Hepting & Davidson, needle blight. N. Car.

Stereum spp., rot of logs, slash & timber, especially: S. radiatum Pk., Pa., Va., Wis.; S. sanguinolentum Alb. & Schw. ex Fr., brown cubical sapwood & heart rot, widespread; S. sulcatum Burt, Pa., Vt., Wis.

Trametes spp., rot of logs & slash, sometimes of timber, especially: T. americana Overh., Me., Wis.; T. carbonaria (Berk. & Curt.) Overh., N. Y., Pa.; T. heteromorpha (Fr.) Lloyd, Me., N. Y., Va.; T. sepium Berk., N. Y.; T. serialis Fr., Me., N. Y.

Valsa abietis Fr., on branches., Va., W. Va.

TSUGA CARCLINIANA Engelm., CARCLINA HEMLOCK. Evergreen tree of Growth Region 27; grown for ornament, Zones V-VI.

Dimerosporium tsugae Dearn., on discolored needles. N. Car.
Melampsora abietis-canadensis (Farl.) Ludwig, needle & cone rust (O, I). Conn.
M. farlowii (Arth.) Davis, needle & cone rust (III). N. Car. (Less susceptible than T. canadensis).
Pucciniastrum myrtilli (Schum.) Arth., needle rust (O, I). N. Car.

TSUGA HETEROPHYLLA (Raf.) Sarg., WESTERN HEMLOCK. Large forest tree of Growth Regions 1, 2, 4, 6, 12; important source of lumber.

Arceuthobium campylopodum Engelm. forma tsugensis (Rosendahl) Gill, dwarf misteltoe. Mont. to Oregon and Alaska.
Armillaria mellea Vahl ex Fr., root rot. Oregon, Wash.
Botrytis cinerea Pers., seedling twig blight. Idaho.
Caeoma dubium Ludwig, needle rust (O, I). Idaho, Mont., Oregon, Wash.
Ceratostomella sp., blue stain. Oregon, Wash.
Coniophora puteana (Schum. ex Fr.) Karst., dry rot of timber. Idaho, Wash.
Didymascella tsugae (Farl.) Maire, leaf blight. Alaska.
Dimerosporium tsugae Dearn., on discolored needles. Alaska, Oregon, Wash.
Echinodontium tinctorium (Ell.) Ell. & Ev., brown stringy heart rot. General.
Fomes annosus (Fr.) Cke., butt rot, white pocket heart rot. Idaho, Oregon, Wash.
F. applanatus (Pers. ex Fr.) Gill., white mottled butt & heart rot. Oregon, Wash.
F. officinalis (Vill. ex Fr.) Faull, brown cubical rot. Oregon, Wash.
F. pini (Brot. ex Fr.) Karst., red ring rot. General.
F. pinicola (Sw. ex Fr.) Cke., brown cubical rot. General.
F. robustus Karst. (F. hartigii Allesch.), white spongy rot. Oregon, Wash.
F. subroseus (Weir) Overh., yellow-brown trunk rot. N.W. States.
Ganoderma oregonense Murr., white spongy rot. Oregon.
Hydnum abietis Hubert, long pocket rot. Oregon, Wash.
Lenzites saepiaria Wulf. ex Fr., brown cubical rot of logs & timber. Idaho, Wash.
Pholiota adiposa Fr., brown mottled butt rot. Idaho.
Polyporus spp., rot of standing or fallen trees, sometimes heart rot of living trees, especially:
P. abietinus Dicks. ex Fr., sapwood rot, general.
P. alboluteus Ell. & Ev., Idaho.
P. amorphus Fr., Idaho, Oregon.
P. borealis Fr., Mont.

TSUGA HETEROPHYLLA cont.

Polyporus caesius Schrad. ex Fr., Idaho.
P. circinatus Fr., white root & butt rot. Idaho.
P. dryadeus Pers. ex Fr., white root and butt rot, Mont. to Oregon & Wash.
P. fibrillosus Karst., Idaho.
P. guttulatus Pk., Idaho.
P. lapponicus Romell, Idaho.
P. melanopus Fr., Idaho.
P. resinosus Schrad. ex Fr., Wash.
P. schweinitzii Fr., red-brown butt & heart rot, Idaho, Oregon, Wash.
P. sulphureus Bull. ex Fr., brown cubical heart rot, Oregon, Wash.
P. versicolor L. ex Fr., general.
P. volvatus Pk., Wash.
Poria spp., rot chiefly of fallen trees & slash, especially: P. colorea Englerth, yellow root rot, Oregon, Wash.; P. isabellina (Fr.) Overh., white pocket rot, Alaska, Idaho; P. subacida (Pk.) Sacc., white spongy root rot, Oregon, Wash.; P. tsugina (Murr.) Sacc. & Trott., white spongy rot, Idaho, Wash.
Rhizina undulata Fr., seedling root rot. Idaho.
Schizophyllum commune Fr., wood rot. Calif.
Stereum spp., white pocket rot of logs & slash, especially: S. chailletii Pers. ex Fr., S. sanguinolentum Alb. & Schw. ex Fr., S. sulcatum Burt., Pacific Northwest.
Thelephora caryophyllea Schaeff. ex Fr., on seedlings. Idaho.
Trametes serialis Fr., rot of logs & timber. Idaho, Wash.
Uraecium holwayi Arth., needle rust (C, I). Alaska, Idaho, Mont., Oregon, Wash.

TSUGA MERTENSIANA (Bong.) Carr., MOUNTAIN HEMLOCK. Evergreen tree of Growth Regions 4 & 12.

Arceuthobium campylopodum Engelm. forma tsugensis (Rosendahl) Gill, dwarf misteltoe. Idaho, Wash.
Dasyscypha arida (Phill.) Sacc., on branches. Idaho.
Echinodontium tinctorium (Ell.) Ell. & Ev., brown stringy rot. Pacific Northwest.
Fomes nigrolimitatus (Romell) Egel., white pocket rot. Oregon.
F. officinalis (Vill. ex Fr.) Faull, brown cubical rot. Idaho.
F. pini (Brot. ex Fr.) Karst., red ring rot. Idaho, Oregon.
F. pinicola (Sw. ex Fr.) Cke., brown trunk rot. Widespread.
Ganoderma oregonense Murr., white spongy rot. Idaho.
Herpotrichia nigra Hartig, snow blight. Mont. to Oregon & Alaska.
Polyporus dryadeus Pers. ex Fr., white root & butt rot. Mont. to Oregon & Wash.
P. schweinitzii Fr., red-brown butt rot. Mont., Oregon.
Stereum sanguinolentum Alb. & Schw. ex Fr., and S. sulcatum Burt., white pocket rot. Idaho, Mont., Wash.
Uraecium holwayi Arth., needle rust (O, I). Idaho, Mont.

(DIVISION OF MYCOLOGY AND DISEASE SURVEY).

SOYBEAN DISEASES IN IOWA IN 1942

I. E. Melhus

Several diseases of soybeans were unusually destructive in Iowa in 1942. Bacterial blight, caused by Pseudomonas glycineum [Phytomonas], was prevalent and destructive throughout the state. The amount of damage varied although no fields were found that were free from the disease. Midwest (McClave) was the most susceptible variety in Iowa this year but no variety showed any marked degree of resistance. The pod blight stage of the disease was severe, and the reduction in yield in different fields varied from 2 to 10 percent.

The mosaic diseases were severe in nearly every field. Field varieties usually showed the yellow mottling and stunting symptoms, and occasionally the dark green rugose symptoms so common in the vegetable soybeans were observed. Judging from the number of plants showing late, mild symptoms a considerable amount of spread must have occurred during the season. Probabilities are that seed infection will be more prevalent than in former years. The damage to the crop varied from 1 to 5 percent.

Downy mildew, caused by Peronospora manshurica, appeared in Iowa this summer for the first time. It was found in southeast Iowa on August 21. At that time the disease was general and severe in many fields. Apparently it spread rapidly over the entire state in a manner characteristic of the Peronosporaceae. The leaf injury in some fields was general and severe, but in others little injury occurred. In late planted soybeans from 15 to 50 percent of the leaf surface of the younger, functional leaves were yellowed or killed by the mildew. Soybeans in early planted fields showed little or no disease. There was no evidence of pod infection. Oospores occurred in the leaves which, unfortunately, insures the establishment of the pathogen in our soils. The fact that a Peronospora has established itself in the Upper Mississippi Valley this year is, of course, an expected incident, but nevertheless it means another crop hazard.

Anthracnose (caused by Colletotrichum glycines) and pod and stem blight (caused by Diaporthe sojae) appeared near the middle of August. Those organisms were abundant by the end of September when killing frosts occurred, but it is difficult to assess the amount of damage they produced. In general, they were found on branches or weak plants that were shaded under the very rank growth of the healthy soybean plants. In nearly every case the affected branch or plant was on the ground. The non-branching upright types were relatively free of both diseases. The usual type of pod and stem blight was rather uncommon this year. Abundant seed infection undoubtedly will occur as both organisms were found on diseased pods.

A new and destructive disease tentatively described as bud blight was present in the majority of fields. The infected plants were dwarfed in

the apical regions; the tip of the stem was curled and brown; the upper 2 or 3 leaves were dwarfed and frequently covered with small necrotic lesions; the whole curled, dwarfed tip was usually hidden by two abnormally large, dark green, stiff, rough leaves; and the pulvinus of most of the leaves showed a dark brown, water-soaked appearance. Few if any pods were set on the severely infected plants.
(FROM MIMEOGRAPHED LEAFLET NO. 6, WAR SERVICE COMMITTEE UPPER MISSISSIPPI VALLEY PLANT PATHOLOGISTS. OCTOBER 2, 1942).

TOBACCO DISEASES IN VIRGINIA IN 1942

S. B. Fenne

Downy mildew or blue mold [Peronospora tabacina] was not of much consequence during the past season. It appeared in the State rather late in May, finally appearing generally throughout the entire eastern tobacco belt. Control measures were not necessary.

Mosaic [virus] of tobacco was more prevalent this year than it has been in the past 10 years. Numerous fields were visited where practically every plant was diseased. In many cases severe stunting occurred and the quality and yield of leaf were undoubtedly very much reduced. In some cases sun scorch followed after severe mosaic infection.

Ring spot [virus] was observed very generally in the dark, sun-cured, and air-cured tobacco areas of the State, with more than usual in the flue-cured area. Some fields were observed in the dark tobacco area with 100% infection. In many cases ring spot was associated with black root rot and the resulting injury was probably more severe than would have been caused by ring spot alone. Several farmers were very much concerned about the damage caused by ring spot. The leaves were much narrower than normal and the diseased plants in general were considerably stunted. As in former years ring spot appeared to be more severe in fields adjacent to clover or lespedeza. One of the common practices in the dark tobacco area is to follow a strip-cropping program in which tobacco is planted in alternate strips with legumes. This has resulted in much more ring spot in those areas than in former years.

Brown spot was responsible for severe damage late in the season. In some cases about 3/4 of the tobacco had been harvested when heavy rains appeared and brown spot developed rapidly causing severe "firing" in many cases. Since brown spot appeared late in the season the loss sustained was not as great as it has been occasionally in former years.

Frenching [non-parasitic] was reported more frequently this year than usual, probably because of the extremely wet season in some areas. In one case a typical specimen of "frenching" was sent in to this office from Charlotte County. Ten days later when the extension pathologist visited this farm there was little evidence of frenching found in the field; complete recovery apparently had occurred. The only evidence remaining was that many of the leaves throughout the field were rather

narrow. Except for this minor symptom the plants had recovered completely.

Black root rot [Thielaviopsis basicola] is apparently very generally distributed throughout the whole tobacco area in Virginia. The use of a resistant Burley type, such as "Kentucky 16", and a resistant flue-cured type, such as "Yellow Special", has been very successful wherever employed. No dark, sun-cured, or air-cured varieties resistant to black root rot are available. Many tobacco fields were visited in each of the tobacco belts where black root rot was obviously causing considerable injury. In a number of cases when the soil warmed up and permitted secondary roots to develop considerable recovery occurred. Frequently black root rot was associated with ring spot and mosaic.

Granville wilt [Phytomonas solanacearum] appeared to be somewhat on the increase during the past season. This was especially true in Mecklenburg County and possibly in Halifax and Nottoway Counties. It appears that the wet weather in the middle and latter part of the season was very favorable to the development of Granville wilt.

Black shank [Phytophthora parasitica var. nicotianae] spread to a few additional farms in Halifax and Pittsylvania Counties; however the damage caused by this disease in previously established fields was less serious than expected. In one field observed in Pittsylvania County, where tobacco was severely diseased with black shank in 1941, the farmer omitted the area where the plants had died the previous year and planted tobacco in the rest of the field, completely surrounding the infested spot. It was naturally expected that he would suffer a severe loss, owing to dissemination of the black shank pathogen by plows, cultivators, and other farm implements. This, however, was not the case; black shank was only scattered throughout the field, causing only 10 or 15% loss of plants in that field.

Root knot [Heterodera marioni] was observed in a number of additional areas throughout the State during the past season. It is doubtful that this disease has spread very much; however, new locations are being found which probably have been present for a number of years but not reported. Root knot is not considered to be a very serious tobacco disease except in the few far eastern tobacco counties with light sandy soil. Root knot has become a very serious problem in Caroline County where sweet potatoes are intensively grown. In that county it has been found necessary to practice careful crop rotations on infested farms.

Sore shin [Rhizoctonia solani] was probably more prevalent during the past season than usual. A trace could be found in practically every field visited and in some instances as many as 3% of the plants were found to be killed.

Sclerotium wilt [S. rolfsii] was observed in several instances in the far eastern counties especially where peanuts and soybeans had been grown

in the rotation. In a few cases spots were found where 20 or 30 tobacco plants had been killed. Generally sclerotium wilt is not considered to be a very serious disease of tobacco.
(EXTENSION PLANT PATHOLOGIST).

DISEASES OF BRIGHT TOBACCO IN PITTSYLVANIA COUNTY, VIRGINIA, DURING THE 1942 SEASON

Wilbert A. Jenkins

Downy mildew or blue mold (Peronospora tabacina) was not a problem during the past season although its presence in the county was reported several times during the month of May, with the earliest confirmed record being taken on May 6. Later, however, blue mold appeared generally throughout the section; but many growers had essentially finished their field planting when it appeared in their beds, and in no instance was it necessary to institute control measures in addition to the removal of the plant-bed covers. Prevailing weather conditions otherwise held the disease in check.

Black leg (Erwinia aroideae) caused more or less severe damage to several plant beds in the northeastern portion of the county. Only one of the affected beds was seen but specimens were received from several others. The bed seen was on new ground, rather densely shaded, and the plants had been unduly forced by over-fertilization and overwatering. Bed rot was severe, fully 50% of the seedlings being affected. Two weeks after taking appropriate steps to dry out the bed, apparently healthy plants were transplanted to the field. No further development of the disease was noted in the field.

Cultures were made and inoculations on seedlings produced typical symptoms within 3 days under conditions of extremely high humidity in the greenhouse. It was suspected that the disease followed a mild outbreak of downy mildew, but this was not confirmed.

Black shank (Phytophthora parasitica var. nicotianae) continued to spread in the southwestern portion of the county, although it is still apparently confined within an area of a 10- to 15-mile radius. On farms where it has been present for some time, the disease appears to reach its peak during the third season following its initial appearance. Evidence indicates that the field incubation period may require 2 full seasons if the inoculum is introduced by any other means than on infected seedlings.

Black shank is known to be present on 10 different farms in Pittsylvania County. Of this number, 5 were discovered in 1941 and 5 during the past season. The infestations on 3 of these farms represent the disease in its second year, but in only 1 was the disease seen during the first season

it appeared on the farm. The infestations on the other 7 farms have been present in destructive form for at least 3 seasons. All the evidence indicates that these latter farms were infested by diseased seedlings brought into the county from States further south during the downy mildew epiphytotic of 1937-1938.

Losses have ranged from 1% to 90% in individual fields, depending on the length of time the disease was present and on certain other factors about which little is known as yet. During the past season losses ranged from 1% to 15% in individual fields. The losses sustained in 1942 remained as low as they did because the growers avoided planting tobacco on the heavily infested sites.

Granville wilt (Phytomonas solanacearum) is more widespread in Pittsylvania County than black shank. We have had numerous but, as yet, unconfirmed reports of its presence, particularly from the extreme northeastern section of the county. However, since the greater number of our confirmed locations are in that area, it is doubtless heavily infested. We have also identified the disease in the southeastern and western areas of the county during the past season, but as yet the number of infestations are few. It appears that Granville wilt is spreading more rapidly in this county than black shank, particularly as regards its entrance into new localities.

It also appears that newly cleared land is potentially more dangerous than older land and that fields alongside drainage channels are particularly liable to early infestation. Our limited evidence indicates that this is probably not altogether due to contaminated drainage. We have also secured some evidence that newly cleared pine land is more often better correlated with severe Granville wilt infestation during the first crop season than is land cleared from oak.

The severity of losses from Granville wilt during the past season was about the same as for black shank, but Granville wilt appears to reach its maximum stage of damage earlier in the season. Due to its wider distribution, the total loss during the past season was greater from Granville wilt than from black shank.

Root knot (Heterodera marioni) is not yet a serious problem generally in Pittsylvania County, although it appears to be on the increase. Serious infestations have developed in the southeastern and deep southwestern portions of the county in recent years. Two farms were located in 1941 and 3 during the 1942 season, in the southern area, on which root knot is the limiting factor in tobacco production. An isolated infestation was also found in the northeastern part of the county.

In a single instance, on very deep soil, a somewhat unusual root knot situation was found. The tobacco had made exceptionally vigorous growth and no marked evidence of root knot appeared until near harvest, when

a high percentage of the plants began to wilt and die rather suddenly. We have attempted to relate this peculiar behavior to such soil peculiarities as depth, fertility, and temperature zones, a combination of which could conceivably have influenced the course of the disease until the crop was almost mature.

Sore shin (Rhizoctonia solani) and sclerotium stem rot (Sclerotium rolfsii) were both present and caused severe damage, particularly the former. The past season, beginning wet and cool and continuing fairly wet, was ideal for development of sore shin in the field. Losses from sore shin were 10% to 20% higher than in normal years and the disease was generally prevalent throughout the county. One field was seen that had been replanted 3 times. The grower was never able to get better than a 30% stand and this came too late to be of any value. In the southeastern portion of the county sore shin was almost as destructive on many fields as we had observed Granville wilt to be elsewhere, 15% to 25% loss in stand not being unusual.

Sclerotium stem rot was limited in its distribution but was highly destructive on certain farms in the central portion of the county. Our observations indicate that, unlike sore shin which varies in intensity from season to season, sclerotium stem rot tends to remain fairly constant season after season, and gradually builds up to the point where tobacco production becomes unprofitable. If true, this might indicate that introduction from the plant bed is a bigger factor in the case of sore shin than in the case of sclerotium stem rot.

Common mosaic and ring spot (virus) have been on the increase in this county for the past several seasons. During the past season it was exceptional to find a crop free from these diseases. It was a common experience to find 20% to 30% pre-harvest infection, and 75% to 100% infection by common mosaic was noted in several fields. Ring spot was generally present along with common mosaic, particularly in fields adjacent to lespedeza.

Black root rot (Thielaviopsis basicola) was reported more often, and more determinations were made, during the past season than during the season before. However, with few exceptions, none of these appeared to be of recent origin. Certain bits of observational data indicate that generalized field infestation may develop slowly, i.e., gradually increase in intensity over a period of years, while typical "spot" infestations may develop fairly suddenly. These latter infestations usually persist almost indefinitely and appear to spread very little.

Black root rot was found generally throughout the county, but was especially prominent in the southwestern and northwestern areas. It has thus far been impracticable to estimate the percentage of infestation of black root rot or the percentage of loss in quality of the affected crop, but we know that both percentages run high annually.

Yellow Special, an exceedingly high quality bright tobacco variety developed by the Virginia Station, continues to produce a maximum yield under our most severe black root rot conditions.

Leaf spots (in part physiological) were severe during the past season. Losses would not be accurately reflected either in the market price or in the poundage sold because of 2 rather unusual circumstances. The market price paid for medium and common quality grades sold was uniformly high so that the growers netted more income from short crops and low quality during the 1942 season than was true the season before on better yields and quality. Losses were otherwise compensated for by an excellent growing season that tended to bring up the total yield, in spite of heavy losses from leaf spot diseases. In other words, a grower might well have lost 10% to 20% of his crop during the past season and still have received a comparable poundage in yield to that of previous seasons when the seasonal conditions were not so favorable.

Our observational data lead us to believe that certain growers lost 20% to 40% of their crop in poundage in certain fields because of leaf spot diseases. For the county as a whole there was a probable loss of 10% to 15% in poundage. Considering all factors, the net loss in acre value, as felt by the growers, was from 5% to 10%.

Under the designation leaf spot diseases, we are placing all leaf spots and tissue break-down which obviously were predominantly correlated with the physiological effects of extremely wet weather on mature or rapidly maturing leaves. Light infections of angular leaf spot [Phytomonas angulata] were seen occasionally. Typical symptoms of potash hunger and sand drown were seen fairly frequently but predominantly only as a unit of the leaf-spot symptom-complex. Uncomplicated symptoms of frenching were not seen during the past season. Numerous fungi (Alternaria in particular) were found on leaf-spot affected leaves, some of them apparently producing fairly uniform lesions, but for the most part they appeared to be feeding on otherwise weakened tissues.
(VIRGINIA AGRICULTURAL EXPERIMENT STATION TOBACCO RESEARCH LABORATORY, CHATHAM).

BRIEF NOTES ON PLANT DISEASES

POTATO LATE BLIGHT SITUATION STILL BAD IN THE UPPER MISSISSIPPI VALLEY: The late blight disease [Phytophthora infestans] of potatoes appearing in typical fashion, has nearly ruined the potato crop over an extensive area. Following the killing of the vines in a few weeks, the tubers began to decay. Some growers tried to rush their potatoes onto the market and met with trouble from the commission houses and wholesalers because of decay. The late blight disease has reduced the Iowa crop by 50 percent. The potato crop in states in the Upper Mississippi Valley has suffered to a similar degree. The only safe course in handling the potatoes now is to delay digging until cool weather and store the tubers at 35°F. or below

in well-ventilated storage. It should be brought to the attention of the seed trade that probably never before has late blight been so general in the Upper Mississippi Valley as it was this year. The affected area extends from Ohio on the east to Colorado on the west. Every agency dealing with potatoes should place special emphasis on the proper storage of all seed and table stock. (From mimeographed leaflet No. 6, War Service Committee Upper Mississippi Valley Plant Pathologists. October 2, 1942).

BEET SCAB IN NEW YORK FIELDS: Beet scab [Actinomyces scabies], during the past season, was severe in a number of fields studied in the Geneva, Stanley, and Benton regions in New York State. In some fields, 100% infection was present. An apparent difference in resistance between beet strains was noted in one planting. Two different strains of Detroit Dark Red were planted in one field. Some 60 rows of a shorter leaf strain were planted in the center of the field and on both sides was planted a longer leaf strain. The shorter leaf strain was affected with practically 100% scab, while the longer leaf strain was free from infection. Since this difference was present in adjacent rows of both strains on each side of the affected shorter leaf strain planting, it appeared that there was a difference in resistance.

These observations will have to be proved by experimental tests before any final statement may be given. (Otto A. Reinking, New York State Agricultural Experiment Station, Geneva. October 16).

A CANKER DISEASE OF CROTALARIA SPECTABILIS IN TEXAS: During dry summer weather in 1941 and 1942, a large number of Crotalaria spectabilis plants at the Tomato Disease Laboratory, Jacksonville, Texas, died apparently from a canker disease on the stem and upper part of the taproot. In some cases a white mold was noted on the cankers near the crown. In the fall of 1942, cultures were made of this material on potato-dextrose agar and in practically all cases Sclerotium [Rhizoctonia] bataticola was obtained. Because of the increasing importance of this legume for soil fertility improvement and root-knot control, further studies of the disease will be made. (P. A. Young, Texas Agricultural Experiment Station, Tomato Disease Laboratory, Jacksonville).

BITTER PIT IN McINTOSH: For many years bitter pit has been known to occur in some varieties of apples produced in Maine. Northern Spy and Baldwin are affected to some degree practically every year. However, bitter pit has never been reported before in McIntosh in Maine. Recently typical symptoms were found on McIntosh grown at Orono after the fruit had been in cellar storage for a short time. In all cases the affected fruit was picked before the normal picking time for McIntosh, either because of necessary fruit thinning to prevent limb breakage, or because of excessive fruit dropping just before normal harvest. The 1942 growing season in the apple-producing region of Maine was characterized by erratic rainfall. During June the precipitation at Orono was 141% when compared with the 40-year average, but the remainder of the growing season was characterized by light rainfall. In July it was only 33%, in August 43%, and in September 71% of the 40-year average. (M. T. Hilborn, Maine Agricultural Experiment Station).

A CORRECTION: On page 370 of the September 1 issue, second paragraph, the name for elm leaf spot should be Gnomonia ulmea, instead of veneta as given.

REQUEST FOR INFORMATION

In this year of peculiar weather conditions there must surely have been many unusual occurrences of plant diseases other than those already given in the Reporter. The Survey would like to have reports giving particular attention to the relation between weather and specific plant disease occurrences.

What has been the further history this year of potato late blight? Response to the earlier request was somewhat disappointing.

There have been numerous reports in the Weekly Weather and Crop Bulletin of tomatoes "blighting and rotting". The late blight fungus was reported on tomatoes in Massachusetts and Virginia; has it been found elsewhere?

Reports on other diseases of both crops would be appreciated.